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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,654	04/02/2004	Shunpei Yamazaki	0756-7279	9416

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EXAMINER	
GUERRERO, MARIA F	

ART UNIT	PAPER NUMBER
2822	

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/815,654	YAMAZAKI ET AL.	
	Examiner	Art Unit	
	Maria Guerrero	2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-84* is/are pending in the application.

4a) Of the above claim(s) *See Continuation Sheet* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *28,32,36,40,44,48,52,56,63,66-72,74,76,78 and 80-84* is/are rejected.

7)☒ Claim(s) *61 and 62* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the Preliminary Amendment filed August 12, 2004 and the Election filed December 29, 2005.

Status of Claims

2. Claims 1-84 are pending.

Election/Restrictions

3. Applicant's election of Species 1D (independent claims 44, 48, 52, 56 and their dependent claims) in the reply filed on December 29, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). However, applicant pointed out claims 27-42 and 72-79 as generic claims. Claims 28, 32, 36, 40, 72, 76 and 78 have been examined with the elected species the rest of the claims recited some embodiments that do not correspond with the elected species i.e., a silicon oxide film covering the thin film transistor.

4. Claims 1-27, 29-31, 37-39, 41-43, 49-51, 53-55, 57-61, 64-65, 73, 75, 77 and 79 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on December 29, 2005.

Information Disclosure Statement

5. The information disclosure statement (s) filed April 2, 2004, July 2, 2004, October 15, 2004, January 12, 2005, January 31, 2005, March 7, 17 2005, May 19, 2005, October 27, 2005 and December 12, 2005 have been considered.

Claim Objections

6. Claims 61-62 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claims 61-62 have not been further treated on the merits.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 28, 32, 36, 44, 48, 52, 66-72, 76, 78, 80, 83-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakai et al. (U.S. 5,032,883) in view Takenouchi et al. (U.S. 5,427,961).

Wakai et al. discloses an inverted staggered TFT having a pixel electrode, an insulating substrate (filmy) 101, a gate insulating film 103, and a semiconductor film 104 (amorphous silicon or the like) (col. 4, lines 15-30, col. 5, lines 40-45). Wakai et al. teaches an insulating film 108 comprising polyimide, silicon oxide or an acrylic resin over a the thin film transistor and therebetween the transistor and the substrate formed by applying a liquid (col. 6, lines 2-15). Wakai et al. teaches the first insulating film 108a being used to flatten the uneven surface above the insulating substrate (fig. 7, col. 7, lines 48-57). Wakai et al. shows the thin film transistor comprising a coplanar thin film transistor as well known in the art (col. 1, lines 35-40). Wakai et al. discloses the card-type electronic device having a pair of filmy substrates opposing to each other and a thin film transistor therebetween (Fig. 5-6, col. 6, lines 35-67).

Wakai et al. does not specifically show the substrate being a flexible substrate and forming a resinous layer over the first flexible substrate. However, Takenouchi et al. discloses a semiconductor device having a resinous substrate, the resinous substrate made of polyester (e.g., PET (polyethylene terephlate)), polyimide, fluoroplastic, PES (polyethylene sulfane) (col. 3, lines 49-55). Takenouchi et al. also teaches a resinous layer provided on the resinous substrate including an acrylic resin (e.g. methyl acrylate

ester, ethyl acryalate ester, butyl acrylate ester, and 2-ethyhexyl acrylate ester (col. 3, lines 55-60). In addition, Takenouchi et al. discloses providing the film on the substrate with the purpose of leveling the initial surface irregularities (col. 4, lines 10-15).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Wakai et al. reference by including the resinous substrate taught by Takenouchi et al. in order to reduce the cost and to obtain a device easily handled having a larger field of application (Takenouchi et al., col. 1, lines 15-25, col. 3, lines 20-25).

8. Claims 40, 56, 63,66-71, 74, 80-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakai et al. (U.S. 5,032,883) in view of view of Kaschmitter et al. (U.S. 5,456,763) and Takenouchi et al. (U.S. 5,427,961).

Wakai et al. discloses an inverted staggered TFT having a pixel electrode, an insulating substrate (filmy) 101, a gate insulating film 103, and a semiconductor film 104 (amorphous silicon or the like) (col. 4, lines 15-30, col. 5, lines 40-45). Wakai et al. teaches an insulating film 108 comprising polyimide, silicon oxide or an acrylic resin over a the thin film transistor and therebetween the transistor and the substrate formed by applying a liquid (col. 6, lines 2-15). Wakai et al. teaches the first insulating film 108a being used to flatten the uneven surface above the insulating substrate (fig. 7, col. 7, lines 48-57). Wakai et al. shows the thin film transistor comprising a coplanar thin film transistor as well known in the art (col. 1, lines 35-40). Wakai et al. discloses the card-type electronic device having a pair of filmy substrates opposing to each other and a thin film transistor therebetween (Fig. 5-6, col. 6, lines 35-67).

Wakai et al. does not specifically show the substrate being a flexible substrate, forming the crystalline silicon by laser irradiation (KrF or XeCl laser light) to the amorphous silicon layer as claimed. However, Kaschmitter et al. shows converting amorphous silicon crystalline silicon by applying laser irradiation using KrF or XeCl excimer laser light (col. 4, lines 1-65, col. 5, lines 35-57). Kaschmitter et al. teaches employing inexpensive plastic substrates such as PES and the temperature up to 200°C. (col. 4, lines 32-50).

Wakai et al. does not specifically show forming the resinous layer over the first flexible substrate. However, Takenouchi et al. discloses a semiconductor device having a resinous substrate, the resinous substrate made of polyester (e.g., PET (polyethylene terephlate)), polyimide, fluoroplastic, PES (polyethylene sulfane) (col. 3, lines 49-55). Takenouchi et al. also teaches a resinous layer provided on the resinous substrate including an acrylic resin (e.g. methyl acrylate ester, ethyl acryalate ester, butyl acrylate ester, and 2-ethyhexyl acrylate ester (col. 3, lines 55-60). In addition, Takenouchi et al. discloses providing the film on the substrate with the purpose of leveling the initial surface irregularities (col. 4, lines 10-15).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Wakai et al. reference by including the flexible substrate, the crystallization process suggested by Kaschmitter et al. and the resinous layer suggested by Takenouchi et al. in order to obtain thin film transistors with low cost and light weight conformal display materials (Kaschmitter et al., col. 5, lines 50-57).

Regarding the process limitations, the patentability of a product does not depend on its method of production. If the product in the product-by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made by a different process. In re Hirao and Sato et al., 190 USPQ 15 at 17 (CCPA 1976 (footnote 3). See also IN re Brown and Saffer, 173 USPQ 685 (CCPA 1972); In re Luck and Gainer, 177 USPQ 523 (CCPA 1973); In re Fessmann, 180 USPQ 324 (CCPA 1974); In re Marosi et al., 218 USPQ 289 (Fed. Cir. 1983); In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

9. Claims 44, 48, 52, 66-69, 76, 78, 80 and 83-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamahiko Nishiki et al. (JP 63-279228) (cited by Applicant) in view of Takenouchi et al. (U.S. 5,427,961).

10. Tamahiko Nishiki et al. discloses a semiconductor device comprising a first substrate, a TFT having pixel electrodes with source and drain regions, a second substrate, a gate insulating film, and a semiconductor film (amorphous silicon (including microcrystalline silicon)) (Fig. 1(A)-6). Tamahiko Nishiki et al. teaches an insulating film (polyimide) having a flat surface provided on the first substrate to planarize the surface (Fig. 1(A)-6, pages 8-15).

Tamahiko Nishiki et al. fails to disclose the substrate being a resinous substrate such as polyethylene terephlate, polyethylene napthtalate, polyethylene sulfite and polyimide as claimed. Tamahiko Nishiki et al. fails to show the resinous material consisting of: methyl ester of acrylic acid, ethyl ester of acrylic acid, butyl ester of acrylic

acid and 2-ethyhexyl ester of acrylic acid as claimed. However, this is known in the art as evidenced Takenouchi et al.

Takenouchi et al. discloses a semiconductor device having a resinous substrate, the resinous substrate made of polyester (e.g., PET (polyethylene terephlate)), polyimide, fluoroplastic, PES (polyethylene sulfane) (col. 3, lines 49-55). Takenouchi et al. also teaches a resinous layer provided on the resinous substrate including an acrylic resin (e.g. methyl acrylate ester, ethyl acryalate ester, butyl acrylate ester, and 2-ethyhexyl acrylate ester (col. 3, lines 55-60). In addition, Takenouchi et al. discloses providing the film on the substrate with the purpose of leveling the initial surface irregularities (col. 4, lines 10-15).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Tamahiko Nishiki et al. reference by including the resinous substrate taught by Takenouchi et al. in order to reduce cost and to obtain a device easily handled having a larger field of application (Takenouchi et al., col. 1, lines 15-25, col. 3, lines 20-25).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double

patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 28, 32, 36, 44, 48, 52, 72 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3, 6-9, 12-13, 15-16,18-19, 21-26, 29-43 of U.S. Patent No. 6,242,758 in view of Mizushima et al. (US 5,066,110) (of record). Claims 1-3, 6-9, 12-13, 15-16,18-19, 21-26 and 29-43 recite the embodiments as claimed except for the pair of substrates opposing to each other. However, Mizushima et al. is presented as evidence to show that would have obvious to a person of ordinary skill to include the pair of substrate in the claims because this is a conventional embodiment on a liquid crystal display device (Mizushima et al., Fig. 2, 5, 7, col. 14, lines 25-65).

12. Claims 28, 32, 36, 44, 48, 52, 66-72, 76, 78 and 80 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 44, 48, 52, 56 and 59-67 of copending Application No. 10/815,653. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 44, 48, 52, 56 and 59-67 of copending Application No. 10/815,653 anticipated the claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Matsunaga et al. (US 5,510,918) teaches several embodiments related to applicant's disclosure.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Guerrero whose telephone number is 571-272-1837.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

January 20, 2006

MARIA F. GUERRERO
PRIMARY EXAMINER

Continuation of Disposition of Claims: Claims withdrawn from consideration are 1-27,29-31,37-39,41-43,49-51,53-55,57-60,64,65,73,75,77 and 79.